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CURRENT LITERATURE

BOOK REVIEWS

The botanical system

In a recent published work,[1] **Tschulok** has sought to give a historical account of the development of the conception of the field of biology, principally botany, and of the logical delimitation of its parts. The historical résumé shows that before **Schleiden** (1843) botany had been expanding in ever widening circles of interest until it included the beginnings of almost all the present phases of the subject. The reform movement of **Schleiden** swept away all divisions excepting morphology and physiology, with taxonomy occupying an insecure position. This precedent has been followed almost universally, as may be seen by reference to the common general textbooks, such as the Bonn textbook. Ecology, plant geography, paleobotany, etc., are now demanding readmittance to the fold upon equal terms.

Tschulok enters into an exhaustive criticism of the several modern systems which have been proposed, and finds that none of them rest upon a logical basis. He then proposes a threefold division. From the standpoint of formal logic, botany is divided into biophysics and biotaxis, the former dealing with "real" relations and the latter with "ideal" relations; from the standpoint of instruction, it may be considered as either general or special; and lastly, there are "seven material viewpoints": (1) taxonomy, (2) morphology, (3) physiology, (4) ecology, (5) chorology, (6) chronology, (7) genetics. It is contended that these divisions include the whole field, and that nothing less will do so. An extended critique justifies this partition of the province of botany, and weighs the claims of such other subjects as pathology and economic botany. It is considered that economic botany, for instance, can have no place as an independent discipline, because in method and material it is in no way to be distinguished from these seven divisions, but rather it is part and parcel of each of them.

The consequences of circumscribing the field of botany, as is commonly done in "general" texts, is given full prominence. A single illustration will suffice. For a half-century paleobotany has been out of the texts and out of the usual courses of instruction. It has also been out of the minds of students, and those who might have taken up research in this field have been guided into other sorts of activity merely because of a lack of opportunity for a general outlook over the whole field of botany. As a result, the examination of this very important material has been left almost wholly to geologists who are usually quite untrained in botany.

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[1] **Tschulok, Phil. S.**, Das System der Biologie in Forschung und Lehre. pp. x +409. Jena: Gustav Fischer. 1910.

At the present time, when many relatively new branches of botany are demanding recognition as coordinate with the old, such a critique of the historical and logical background of the science is especially welcome.—W. L. EIKENBERRY.

American men of science

President JORDAN'S recently issued collection of biographical sketches[2] brings together in a single volume and in very pleasing form the personal history and prominent achievements of seventeen American scientific leaders. The sketches are in all instances by a friend, a colleague, or at least a *Fachmann* of the scientist treated, and as a result combine in high degree insight and sympathy. The selection of the seventeen scientists most worthy to be included in such a series must have offered some difficulty, though such appropriate names as AGASSIZ, AUDUBON, RUMFORD, GRAY, DANA, and some others will occur at once to the layman as well as to the scientific student. The distribution as to subject is not without interest. Of physicists there are four, and of zoologists three; while ornithology, paleontology, and geology have two each; and botany, chemistry, anatomy, and astronomy claim each a single representative.

The interest of the botanical reader will naturally center upon the account of Dr. GRAY, whose life and work are treated with obvious affection by his pupil and friend Professor JOHN M. COULTER. Sketching clearly what is known of Dr. GRAY'S early history, he brings out vividly as he proceeds the unity of purpose, unflagging diligence, extraordinary capacity, and grand achievements which characterized GRAY'S career. Finally, he is able from personal acquaintance to add many more intimate touches, which give life to the sketch and make the reader feel acquainted with the charming personality of its subject. As those capable of giving them decrease, these personal reminiscences of Dr. GRAY become the more precious.

In perusing the various biographies here assembled, one is impressed by the fact that GRAY more than any other of these men, if perhaps we except Count RUMFORD who lived in Europe, and AGASSIZ who was born and educated there, stood in the closest relation to European activities in his science and did much to correlate and harmonize the intellectual endeavors of the New World and the Old.

Without any lack of patriotism it may be pointed out to publishers that works on distinguished Americans are rendered no more attractive by much gilt or by a squashed eagle painfully recalling the unhappy bird on the demonetized trade dollar. However, notwithstanding its forbidding appearance, the volume furnishes fascinating reading and gives information and stimulus in no small measure. "There were giants in the earth in those days."—B. L. ROBINSON.

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[2] Leading American men of science. Edited by DAVID STARR JORDAN. Illustrated. 8vo. pp. 471. New York: Henry Holt & Co. Forming one of a series of volumes, edited by W. P. TRENT, devoted to biographies of leading Americans.